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Relevance scale ☐ ☐ ☐ ☐ ☐**121** [XAL: an algebra for XML query optimization](#)

Flavius Frasinicar, Geert-Jan Houben, Cristian Pau

January 2002 **Australian Computer Science Communications , Proceedings of the thirteenth Australasian conference on Database technologies - Volume 5**, Volume 24 Issue 2Full text available: [pdf\(867.42 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper proposes XAL, an XML ALgebra. Its novelty is based on the simplicity of its data model and its well-defined logical operators, which makes it suitable for *composability*, *optimizability*, and *semantics definition* of a query language for XML data. At the heart of the algebra resides the notion of *collection*, a concept similar to the mathematician's monad or functional programmer's comprehension. The operators are classified in three clusters: *extraction* operat ...

**Keywords:** XML, query algebra, query language, query optimization**122** [Research sessions 2 and 3: information processing on WWW and XML: A normal form for XML documents](#)

Marcelo Arenas, Leonid Libkin

June 2002 **Proceedings of the twenty-first ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems**Full text available: [pdf\(363.37 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

This paper takes a first step towards the design and normalization theory for XML documents. We show that, like relational databases, XML documents may contain redundant information, and may be prone to update anomalies. Furthermore, such problems are caused by certain functional dependencies among paths in the document. Our goal is to find a way of converting an arbitrary DTD into a well-designed one, that avoids these problems. We first introduce the concept of a functional dependency for XML, ...

**123** [XAS: a system for accessing componentized, virtual XML documents](#)

Ming-Ling Lo, Shyh-Kwei Chen, Sriram Padmanabhan, Jen-Yao Chung

July 2001 **Proceedings of the 23rd International Conference on Software Engineering**Full text available: [pdf\(143.39 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)  
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*XML is emerging as an important format for describing the schema of documents and data to facilitate integration of applications in a variety of industry domains. An important issue that naturally arises is the requirement to generate, store and access XML documents.*

*It is important to reuse existing data management systems and repositories for this purpose. In this paper, we describe the XML Access Server (XAS), a general purpose XML based storage and retrieval system which ...*

**124 Pushing reactive services to XML repositories using active rules**

Angela Bonifati, Stefano Ceri, Stefano Paraboschi

April 2001 **Proceedings of the tenth international conference on World Wide Web**

Full text available:  [pdf\(203.85 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** SOAP, XML, active rules, document management, push technology, query languages for XML

**125 Strong functional dependencies and their application to normal forms in XML**

Millist W. Vincent, Jixue Liu, Chengfei Liu

September 2004 **ACM Transactions on Database Systems (TODS)**, Volume 29 Issue 3

Full text available:  [pdf\(214.21 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this article, we address the problem of how to extend the definition of functional dependencies (FDs) in incomplete relations to XML documents (called XFDs) using the well-known strong satisfaction approach. We propose a syntactic definition of strong XFD satisfaction in an XML document and then justify it by showing that, similar to the case in relational databases, for the case of simple paths, keys in XML are a special case of XFDs. We also propose a normal form for XML documents based on o ...

**Keywords:** XML, functional dependency, normalization

**126 Short presentations I: Managing and organizing archaeological data sets with an XML native database**

Alberto Vezzoso, Alessio Romagnoli, Oscar Bocchini, Sandro Locati

November 2001 **Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage**

Full text available:  [pdf\(173.39 KB\)](#) Additional Information: [full citation](#), [index terms](#)

**127 Advanced XML technologies and applications: Honey, I shrunk the XQuery!: an XML algebra optimization approach**

Xin Zhang, Bradford Pielech, Elke A. Rundensteiner

November 2002 **Proceedings of the 4th international workshop on Web information and data management**

Full text available:  [pdf\(375.44 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


A lot of work is being done in the database community on mapping of XML data into and out of relational database systems, specifically, the query processing over such data using XQuery. We discuss our solution, the XML Algebra Tree (XAT), as part of our larger XML management system called Rainbow. Rainbow uses XQuery to describe the loading and extracting of XML data into relational systems and also for the execution of queries against pre-defined XML views of that stored data. The XML algebra tr ...

**Keywords:** XML, XQuery, algebra, operator, optimization, relational

**128 Building database applications of virtual reality with X-VRML**

Krzysztof Walczak, Wojciech Cellary

**February 2002 Proceeding of the seventh international conference on 3D Web technology**

Full text available:  [pdf\(512.41 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A new method of building active database-driven virtual reality applications is presented. The term "active" is used to describe applications that allow server-side user interaction, dynamic composition of virtual scenes, access to on-line data, continuous visualization, and implementation of persistency. The use of the X-VRML language for building active applications of virtual reality is proposed. X-VRML is a high-level XML-based language that overcomes the main limitations of the current virtual ...

**Keywords:** Java, MPEG-4, VRML, Web3D, XML, databases, multimedia

**129 Computing graphical queries over XML data**

Sara Comai, Ernesto Damiani, Piero Fraternali

October 2001 **ACM Transactions on Information Systems (TOIS)**, Volume 19 Issue 4

Full text available:  [pdf\(707.80 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The rapid evolution of XML from a mere data exchange format to a universal syntax for encoding domain-specific information raises the need for new query languages specifically conceived to address the characteristics of XML. Such languages should be able not only to extract information from XML documents, but also to apply powerful transformation and restructuring operators, based on a well-defined semantics. Moreover, XML queries should be natural to write and understand, as a nontechnical person ...

**Keywords:** Document restructuring, graphical query languages, semantics

**130 Graph-based GUIs for querying XML data: the XML-GL experience**

S. Comai


March 2001 **Proceedings of the 2001 ACM symposium on Applied computing**

Full text available:  [pdf\(202.95 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

**131 XML data modeling and storage: A temporal data model and management system for normative texts in XML format**

Fabio Grandi, Federica Mandreoli, Paolo Tiberio, Marco Bergonzini

November 2003 **Proceedings of the 5th ACM international workshop on Web information and data management**

Full text available:  [pdf\(189.41 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we present the results of an on-going research activity concerning the temporal management of normative texts in XML format. In particular, four temporal dimensions (publication, validity, efficacy and transaction times) are used to correctly represent the evolution of norms in time and their resulting versioning. Hence, we introduce a multiversion data model based on XML schema and define basic mechanisms for the management of norm texts. Finally, we describe a prototype management system ...

**Keywords:** legal information systems, temporal XML

**132 Data management issues in electronic commerce: The design and performance evaluation of alternative XML storage strategies**

Feng Tian, David J. DeWitt, Jianjun Chen, Chun Zhang

March 2002 **ACM SIGMOD Record**, Volume 31 Issue 1

Full text available:  [pdf\(484.91 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

This paper studies five strategies for storing XML documents including one that leaves documents in the file system, three that use a relational database system, and one that uses an object manager. We implement and evaluate each approach using a number of XQuery queries. A number of interesting insights are gained from these experiments and a summary of the advantages and disadvantages of the approaches is presented.

**133 Research track: XRules: an effective structural classifier for XML data**

Mohammed J. Zaki, Charu C. Aggarwal

August 2003 **Proceedings of the ninth ACM SIGKDD international conference on Knowledge discovery and data mining**

Full text available:  [pdf\(228.97 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

XML documents have recently become ubiquitous because of their varied applicability in a number of applications. Classification is an important problem in the data mining domain, but current classification methods for XML documents use IR-based methods in which each document is treated as a bag of words. Such techniques ignore a significant amount of information hidden inside the documents. In this paper we discuss the problem of rule based classification of XML data by using frequent discrimination ...

**Keywords:** XML/Semi-structured data, classification, tree mining

**134 XML and information integration: XPath query transformation based on XSLT stylesheets**

Sven Groppe, Stefan Böttcher

November 2003 **Proceedings of the 5th ACM international workshop on Web information and data management**

Full text available:  [pdf\(230.70 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Whenever XML data must be shared by heterogeneous applications, transformations between different application-specific XML formats are necessary. The state-of-the-art method transforms entire XML documents from one application format into another e.g. by using an XSLT stylesheet, so that each application can work locally on its preferred format. In our approach, we use an XSLT stylesheet in order to transform a given XPath query such that we retrieve and transform only that part of the XML document ...

**Keywords:** XPath, XSLT, query rewriting, query transformation

**135 Research sessions: XML I: StatiX: making XML count**

Juliana Freire, Jayant R. Haritsa, Maya Ramanath, Prasan Roy, Jérôme Siméon

June 2002 **Proceedings of the 2002 ACM SIGMOD international conference on Management of data**

Full text available:  [pdf\(1.13 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The availability of summary data for XML documents has many applications, from providing users with quick feedback about their queries, to cost-based storage design and query optimization. *StatiX* is a novel XML Schema-aware statistics framework that exploits the structure derived by regular expressions (which define elements in an XML Schema) to pinpoint places in the schema that are likely sources of *structural skew*. As we discuss below, this information can be used to build concise ...

**136 Standardization in IT: Inter-organizational document exchange: facing the conversion problem with XML**

Luis Martín Díaz, Erik Wüstner, Peter Buxmann

March 2002 **Proceedings of the 2002 ACM symposium on Applied computing**

Full text available:  [pdf\(470.62 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Information exchange processes are often characterized by the need of translating from one data format into another in order to achieve compatibility between information systems. A conversion problem often arises when exchanging files between applications of different software vendors or when incorporating legacy business data into new standard software. In this paper we want to survey the conversion problem in the field of multi-organizational networks, since participants often use different da ...

**Keywords:** Java, XML, conversion problem, information systems, inter-organizational document exchange, standardization, supply chain management

137 Report on WebDB'2000: 3rd international workshop on the Web and databases

Dan Suci, Gottfried Vossen

June 2000 **ACM SIGKDD Explorations Newsletter**, Volume 2 Issue 1

Full text available:  [pdf\(274.86 KB\)](#) Additional Information: [full citation](#), [index terms](#)

**Keywords:** World-Wide-Web, XML, databases

138 Integrating relational database schemas using a standardized dictionary

Ramon Lawrence, Ken Barker

March 2001 **Proceedings of the 2001 ACM symposium on Applied computing**

Full text available:  [pdf\(614.67 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

**Keywords:** XML, automatic conflict resolution, multidatabase, relational schema integration, standardization

139 The webspace method: on the integration of database technology with multimedia retrieval

Roelof van Zwol, Peter M. G. Apers

November 2000 **Proceedings of the ninth international conference on Information and knowledge management**

Full text available:  [pdf\(208.62 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** concept-based search, content-based information retrieval, daemon data dictionary, modelling data on the web

140 XML access control: Access control of XML documents considering update operations

Chung-Hwan Lim, Seog Park, Sang H. Son

October 2003 **Proceedings of the 2003 ACM workshop on XML security**

Full text available:  [pdf\(298.78 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

As a large quantity of information is presented in XML format on the Web, there are increasing demands for XML security. Until now, research on XML security has been focused on the security of data communication using digital signatures or encryption technologies. As XML is also used for a data representation of data storage, XML security comes to involve not only communication security but also managerial security. Managerial security is guaranteed through access control, but existing XML acces ...

**Keywords:** XML document, XML update, access control

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